PRICING TO MARKET EFFECTS IN ALBANIA: HOW COMPETITIVE IS THE EXTERNAL SECTOR?

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Abstract

It is often presumed that small open economies do not have market power and therefore take prices as given in international markets. This study tries to test this hypothesis by assessing the degree of pricing-to-market of exporters and importers in Albania. It analyzes the price-setting behavior in the external sector in conjunction with the international environment and domestic costs. Econometric results suggest that pricing-to-market effects are considerable in the price-setting behavior. It is estimated that international price movements and exchange rate changes influence only half of developments in the export prices of goods that are produced in Albania. Their pass-through to import prices is somehow higher, where a 1 percent increase in foreign prices and/or exchange rate depreciation might lead to 0.7 percent increase in imported goods' prices. The impact is similar in both, long run and the short run. These findings have important implications for the monetary policy objective of price stabilization and the specification of transmission channels in macroeconomic models for the Albanian economy.

Keywords: Pricing to market, exchange rate, exports, imports

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INTRODUCTION

Prices of exported and imported goods are influenced by developments in the international markets and exchange rate movements. In this respect, small open economies have been widely assumed in the literature as having no market power in the price-setting process of their traded goods. In that case, trade prices are expected to be determined purely by international price and exchange rate performance, hence bear a full pass-through. Empirical findings have, however, revealed incomplete pass-through in advanced as well as developing economies. This is taken as an evidence of the so-called "pricing-to-market" effects, which are assumed to reflect the market power of a country's exporters and importers. Stimulated by imperfect competition/sticky prices framework, many authors have put their views forward that even products from low income exporters can compete against international products, and their prices are concurrently determined by both, domestic and external factors.

According to Krugman (1986), pricing-to-market (PTM) is a phenomenon that occurs due to product differentiation or imperfect competition, where exporting firms attempt to maintain the same price level despite the depreciation in the importers' currency. Otherwise stated, PTM means that producers tend to absorb exchange rate fluctuations through the applied markup, and this being reflected in a relatively stable final export price in order to keep market share in compliance with competition in destination markets. Firms producing similar goods also face peer to peer competition when entering foreign markets. But, at the same time they have to differentiate their products in terms of price and quality compared to domestic producers. Thus, the pricing-to-market strategy is not an easy process. It depends on domestic factors that evolve in the respective destination markets. Another important factor in the pricing-to-market strategy of producing firms is the degree of elasticity of demand in importing countries and their willingness to trade off short-run costs for long-run market share objectives.

Assessing the degree of pricing-to-market in external trade is important for policymakers. The sensitivity of import and export prices to exchange rate developments provides insights on the role of exchange rate in the adjustment of foreign trade deficits to sustainable levels. Given a substantial response of trade volumes to relative prices, a high exchange rate elasticity of prices would lead to significant improvements in trade balance through the expenditure switching effect. Furthermore, a precise estimate of the exchange rate and foreign price pass-through to domestic prices is crucial from the monetary policy perspective with the objective of price stability. Their effects are transmitted to domestic prices through external trade deflators, especially import prices. Designing an optimal monetary policy would thus take into account the effects of PTM, i.e. the degree of local currency price stability.

Our research analysis tries to find out whether exporting and importing firms in Albania with trivial shares in international trade can still deliver pricing to market. The findings contribute to the empirical literature on PTM in developing countries. In addition, they help to better understand the channels in the transmission mechanism in order to improve the external sector specification in macroeconomic models for the Albanian economy. To preview the results, foreign prices and exchange rate movements influence only half of developments in the prices of Albanian exported goods. Their pass-through to import prices is somehow higher, where a 1 percent increase in foreign prices and/or exchange rate depreciation might lead to 0.7 percent increase in imported goods' prices.

In what follows, we will shortly elaborate the concept of pricing to market and show some empirical findings in the literature on advanced and developing countries. Next section displays some stylized facts on the performance of exported and imported goods sectors in Albania. Then we introduce the model specifications for export and import prices followed by their respective results for the long- run and short-run elasticities to domestic and external factors.

LITERATURE REVIEW

The law of one price (LOOP) in international economics assumes that prices should be equal in every country, once it is expressed in a single currency. A vast empirical literature has, however, documented that LOOP might hold only in the long run, and the speed adjustment to equilibrium might take even decades. One possible explanation to the LOOP failure is the theory of pricing-to-market (PTM), which dwells on the role of imperfect competition in trade. Various studies have shown the degree of competition to be mainly determined by the exporter's share in the destination market and the level of product differentiation. A higher market share would reduce the incentive of the exporter to absorb nominal shocks in its own currency prices, therefore raising the likelihood of passing exchange rate movements to her buyers. PTM is found particularly high for importers in the Euro Area (Warmedinger, 2004) and the US (Vigfusson, Sheets and Gagnon, 2009), which could be due to the smaller shares of exporters in these huge markets. Also, greater product differentiation gives rise to elements of monopoly or market segmentation, which allow a firm to exercise some control over market prices by charging a destination-specific mark-up on the marginal cost. The mark-up is related to the price elasticity of demand for their traded goods. Thus, the lower the price elasticity the higher the firms' ability to profitably raise market prices above marginal costs.

Numerous empirical studies have explored the PTM phenomenon and tried to contribute to the understanding of export pricing strategies in foreign markets. The pricing to market

concept was first elaborated by Krugman (1986), who identified this pricing phenomenon as an effective tool for producers to align export prices according to their growth strategies in foreign markets. However, the author argues that PTM takes place only in an environment of imperfect competition where price discrimination comes as a result of market segmentation in spite of factors affecting production such as geography, information asymmetry, costs of transport and bilateral trade relations. Similarly, Froot and Klemperer (1989) conceptualize a dynamic model based on the assumption that market shares are important to determine long term profits for exporting firms and given the exchange rate volatility they have to make tradeoffs between profits and the market share.

From a theoretical point of view, Brauer (1999) utilizes the market oligopolistic framework to explain that pass through of prices might come as a dual reaction to exchange rate or production cost differences, considering price elasticity of demand and product substitutability in the destination market as fundamental export price determinants. Bacchetta and van Wincoop (2005) present a model where the invoicing choice of exporting firms depends on the market share in the importing country and on the extent to which products of domestic firms are substitutes for those of competing foreign firms.

The literature offers ample evidence for the existence of PTM in advanced as well as developing economies. Knetter (1989), Marston (1990), Knetter (1993), Swamy and Thurman (1994), Gagnon and Knetter (1995) bring empirical evidences that PTM of exporters from major global economies is delivered by making a mark-up adjustment that is specific for each destination market stabilizing final export price in order to effectively face local competition and keep the market share. In this regard, exchange rate is the main determinant behind price adjustment processes while changes in income between countries are seen not of the same level of importance. Jaeger et al. (2001) find empirical evidences that low inflation regimes tend to minimize exchange rate pass-through effects and as result exporters applying higher markup adjustments to keep stable export prices toward these economies. In a panel analysis of 11 industrialized countries Bailliu and Fujii (2004) argue that the decline of exchange rate pass-through to domestic prices is attributed to a low-inflation environment. Yang (2007) investigating for possible asymmetries in the pass-through to US import prices concludes that exchange rate pass-through effect during periods of dollar appreciation differs from one industry to another.

Studying the determinants of pricing-to-market at the firm level in 12 developing and emerging economies, Asprilla et. al. (2015) find that exporters absorb 10 to 15 percent of currency fluctuations and pass through the difference, and pricing-to-market effects increase with the firm size. Bussiere, DelleChiaie, and Peltonen (2014) estimate export and import price
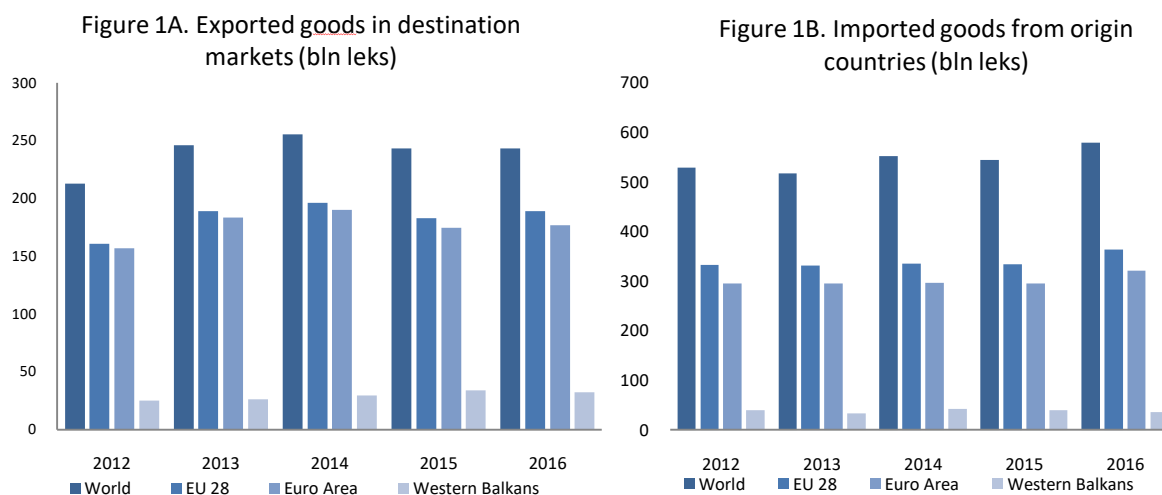
equations for 40 countries of which 22 emerging market economies aiming to understand heterogeneity across countries in the degree of exchange rate pass-through to import and to export prices. The results indicate that export price elasticities are higher in emerging market economies than in advanced economies, and among others trade elasticities are primarily influenced by macroeconomic factors.

In an empirical analysis on low-middle income countries (including Albania), Rollo (2014) rejects the assumption that small open economies are pure price takers, and thus able to conduct pricing to market. Her conclusion stems from the findings that exporters from these countries apply different prices for the same goods in different markets. Similarly, Penkova and Sinclair (2010) test for potential PTM behavior of Bulgarian exporters in textiles and machinery industries over the period 1998-2008. The empirical results found by the authors offer new evidence on the optimal response of a firm's export price to changes in currency values depending on a number of factors that are transmitted through two main channels: exchange rate impact on marginal cost and mark-up of price over marginal cost.

SOME STYLIZED FACTS

The Euro Area is the main trading partner for Albanian exporters, while the rest of the world amounts to one fourth of the total exported goods. Data from the Institute of Statistics shows that the top five Euro Area markets for Albanian exports consist of Greece, Germany, Malta, Spain and Italy, with the latter accounting for more than half of Albanian exports. Eighty percent of the exported products during the period 2005-16 consisted of minerals (27%), base metals (16%), textiles (20%) and footwear (18%). The EA19 has been the destination for about all exports of textiles and footwear, and for more than half of minerals and metals (the rest going to the non-EU countries).
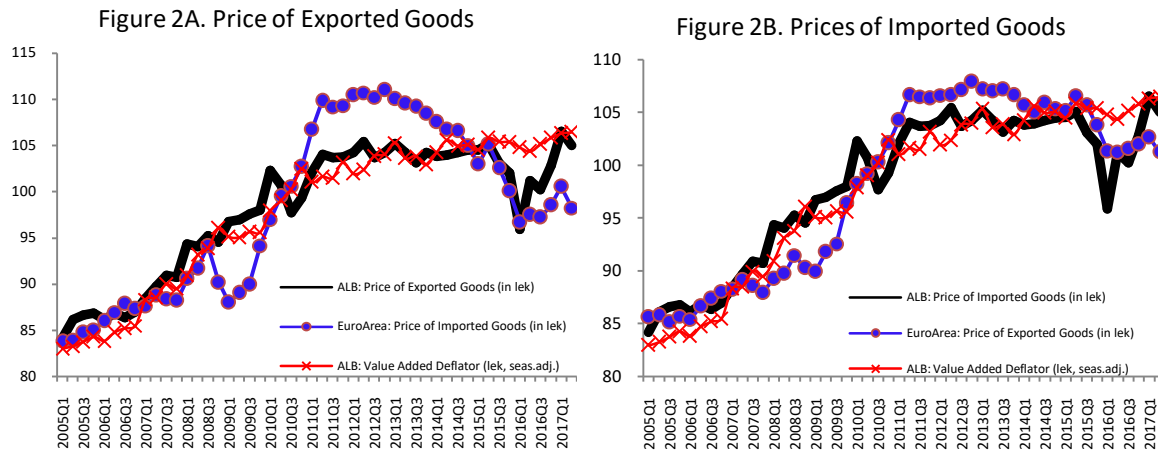
The imported goods appear somehow less concentrated than exports. More than fifty-five percent of imports come from Euro Area (or about 60% from the EU28). Italy, Greece, Germany, Spain and France appear to be the most important countries for imports originating from the Euro Area. About two-thirds of imported goods during 2005-16 consisted of minerals (15.4%), machineries (14.3%), base metals (11.3%), textiles (8.6%), chemical products (8.3%) and prepared foods, alcoholic drinks and tobacco (7.9%).

Figure 1A. Exported goods in destination markets (bln leks)

■ World ■ EU 28 ■ Euro Area ■ Western Balkans

Figure 1B. Imported goods from origin countries (bln leks)

■ World ■ EU 28 ■ Euro Area ■ Western Balkans

Source: Institute of Statistics, Bank of Albania, Eurostat, Authors' calculation

Figure 2 displays the performance of traded goods prices in comparison to domestic and international prices. Both export and import prices of Albania have apparently followed the pace of domestic prices, for most of the period since 2005. The trajectory of trade prices has managed to withstand quite well the international trade disorders caused by the global financial crisis of 2007-10. In terms of GDP, the emerging economies in Europe experienced the most adverse effects in the world (Shelburne, 2010).

Yet, Albanian trade prices did not bend down in the midst of global crisis around 2009, nor did they speed up afterward during a faster-than-expected recover of international trade. Export and import prices seem rather predictable until mid-2015, except for the recent years when they have rather attuned to competitors' prices in the Euro Area. Indeed, one might expect a rather high co-movement of trade prices between Albanian firms and their competitors, given the trivial stake of Albanian traders in the Euro Area's exports and imports. According to the Eurostat's data, the ratio of Albania in the Eurozone's external trade has remained at merely 0.1 percent for the past decade, which is pretty much comparable with its relative economic size. This suggests us that the price-setting behavior of Albanian firms could be influenced by factors other than the market share, such as product differentiation that allows them to create specific competitive advantages.

Figure 2A. Price of Exported Goods

Legend:
— ALB: Price of Exported Goods (in lek)
—●— EuroArea: Price of Imported Goods (in lek)
—✕— ALB: Value Added Deflator (lek, seas.adj.)

Figure 2B. Prices of Imported Goods

Legend:
— ALB: Price of Imported Goods (in lek)
—●— EuroArea: Price of Exported Goods (in lek)
—✕— ALB: Value Added Deflator (lek, seas.adj.)

Source: Institute of Statistics, Bank of Albania, Eurostat, Authors' calculation

METHODOLOGY

In the general theoretical framework of price discrimination exporting firms apply different pricing strategies depending on the destination market and the exchange rate. Let's suppose an exporter that sells goods in *n* separate destination markets, indexed by *i*. The profits of the exporting producer are given as:

$$\Pi(p_{1,\dots,}p_n) = \sum_{i=1}^{n} p_i q_i(e_i p_i) - C\left(\sum_{i=1}^{n} q_i(e_i p_i), w\right)$$

In the above equation, *p* is the export price expressed in producers' domestic currency; *e* denotes the foreign exchange rate per unit of producer's currency deflated by the price level in destination market; *q* is the quantity of goods demanded in the destination market (a function of relative prices); and *w* represents the index of input prices expressed in own currency, as part of the total cost function *C*.

Following a standard first order conditions (FOC) for profit maximization it is necessary that the firm's marginal revenue from sales in each market should be equal to marginal cost of production. Thus, the optimal export price to each destination market is the product of the common marginal cost (*mc*) and a destination-specific mark-up:

$$p_i = \left(\frac{\varepsilon_i(e_i p_i)}{\varepsilon_i(e_i p_i) - 1}\right) mc$$

Where *i* = 1,......, *n*, and ε_{it} represents the relative price elasticity of demand in the foreign market for a specific good. As possible to understand from the second equation the producer's optimal export price to each destination depends on two determining factors: the common marginal cost and the mark-up of export price over marginal cost.

The theoretical approach is very similar in the literature, yet the econometric models take various forms in terms of specification and control variables. Our estimation method follows a standard framework as in Campa and Goldberg (2005), Gagnon and Ihrig (2004), Bussiere et al (2008) and other authors.

In modeling the export and import prices of Albania we have assumed that markets operate in monopolistic competition with differentiated products and the mark-up on production costs is fixed in the long run. Trade prices are explained by international prices (including the exchange rate pass-through) as well as the prevailing domestic prices. The long-run models of export and import prices are estimated separately in natural logarithms as follows:

$$\ln(PT) = b_{pd}\ln(PD) + b_{pc}\ln(PC)$$

Where, *PT* is the deflator for imported and exported goods expressed in Albanian lek, estimated separately; *PD* stands for domestic prices, proxied by GDP deflator at factor costs; and *PC* represents foreign competitors' prices, constructed as international prices in euro currency multiplied by the exchange rate of leks per unit of euro. The international price in the Albanian export (import) price equation is proxied by the Euro Area import (export) deflator. Albania's external trade prices are proxied by the deflators of exported and imported goods. Both data series are only published from the first quarter of 2009, therefore previous periods needed to be extrapolated to increase the sample size of our regression analysis. Because imported goods account for majority of imports, the growth of aggregated import deflator was used to extrapolate the series before 2009. On the other hand, the ratio of exported goods in total exports has gradually shrunk in the past decade. Moreover, its deflator did not commove with the total deflator but showed similar patterns with producer prices. Therefore, the latter was hired to extrapolate observations in the preceding years. All the deflators, for the domestic and international data, and the exchange rate were indexed with 2010 as the base year, and the seasonal components were removed from the original data by using the Tramo/Seats method.

The primary objective is to assess if there are competitive advantages that Albanian traders can use to tackle market competition. This can be measured by b_{pd} coefficient in front of domestic prices. The higher it is the less competitive and stickier should be Albania's export and import prices. And the more it falls to zero the closer to full pass-through is b_{pc} coefficient, suggesting that Albanian firms are price takers. Please note that exchange rate and international prices in our model are restricted to have the same effects on trade prices. Lek depreciation and rising foreign prices are expected to lead to higher trade prices, thus b_{pc} should be positive. This restriction comes from the assumption of fixed mark-up in markets with monopolistic competition. Yet it could only be plausible in the long run and may not hold in the short run, where the reaction to exchange rate and international price developments might be

different. Many studies have imposed the homogeneity restriction such that the sum of estimated coefficients b_{pd} and b_{pc} is equal to one.

The results should help us improve on model specifications of external trade for Albania. Economic models have often relied on trade price equations as solely a function of foreign prices and exchange rates on the assumption that small open economies are pure price takers. A positive b_{pd} and substantially above zero would reject that hypothesis and push for an augmentation of the function of external trade prices with domestic cost indicators.

EMPIRICAL RESULTS

This section presents the empirical results on the importance of factors that can influence Albanian firms' pricing strategy with regard to domestic production costs and international developments. The sample period of the regressions runs from first quarter of 2005 to second quarter of 2017. Table 1 displays the unit root test. Price variables are generally found to be non-stationary in levels, and become stationary in first difference. Because variables are of the order I(1), the dynamic ordinary least squares (DOLS) method was used to estimate the long-run PTM effects. The DOLS method is a cointegration approach that helps to take care of endogeneity and serial correlation problems in the models. We assume there is a single cointegrating relationship in the model, with causality running from costs and foreign price developments to export and import prices.

Table 2 displays the sensitivity of external trade prices. It seems that movements in competitors' prices (which combine foreign prices with the exchange rate) are passed only half to export prices, and about two-thirds onto import prices. This implies that PTM effects are considerable in Albania, as measured by the impact of domestic costs on export (0.46) and import (0.33) prices. The incomplete pass-through of external factors and the substantial response to domestic costs should force us to change the perception that small open economies have limited power to negotiate their prices. Consequently, it is necessary for equations of export and import deflators to include indicators on domestic costs in order to improve the long-term projections of the external trade bloc in a macromodel.

The literature reveals that higher than expected PTM and resulting incomplete pass-through might stem from "macro" structural factors, such as an environment of low inflation, low exchange rate volatility, and relatively low economic openness (see for e.g. Campa and Goldberg, 2002). A number of papers have evidenced a reduction in the exchange rate pass-through in low inflation countries. Hence, they exhibit higher pricing to market effects. Similar findings have been documented for Albania, where annual inflation averaged 2.8 percent during the 2000-10 period and only 2 percent in the subsequent seven years. In such an environment

with expectations of low future prices it could be harder for cost increases to be passed on to prices, as argued by Jaeger et al (2001). Similarly, low exchange rate volatility is another factor that may influence more pricing-to-market behavior from exporters (Bussière et al, 2008). Indeed, certain studies have considered the Albanian currency to perform as in a fixed exchange rate regime, due to its low exchange rate volatility against euro. A comparison of floating currencies in the CESEE countries reveals that from 2010 to 2017 the coefficient of variation of lek has been 1.6 percent, against 2.9 to 23.5 percent in the others. Consequently, there might be more favorable circumstances for incomplete pass-through and higher pricing to market behavior from Albanian traders. Finally, the difference between the estimated pass-through to import and export prices might be explained by the relative economic openness. Arather high pass-through to import prices is consistent with the considerable imported good penetration in economy (nearly 32% of gross domestic production). On the other hand, the lower-than-expected export price sensitivity is in line with the much lower export ratio to GDP (averaging just above 8% in the last seven years).

Table 1: Phillips-Perron Unit Root Tests, 2005Q1-2016Q4 period

Null Hypothesis: Unit root	Levels (prob.$^\$$)	1st difference (prob.$^\$$)
With constant		
AL: Price of Imported Goods	0.1724	0.0000
AL: Price of Exported Goods	0.3195	0.0000
AL: Price of Gross Value Added	0.1559	0.0035
ALL/EUR Exchange Rate	0.6834	0.0000
EA: Price of Imported Goods	0.2497	0.0011
EA: Price of Exported Goods	0.3464	0.0013
With constant and trend		
AL: Price of Imported Goods	0.0161	0.0000
AL: Price of Exported Goods	0.6832	0.0000
AL: Price of Gross Value Added	0.0035	0.0001
ALL/EUR Exchange Rate	0.9679	0.0002
EA: Price of Imported Goods	0.6717	0.0048
EA: Price of Exported Goods	0.6086	0.0071
Without constant and trend		
AL: Price of Imported Goods	0.7150	0.0000
AL: Price of Exported Goods	0.9867	0.0000
AL: Price of Gross Value Added	0.9954	0.0000
ALL/EUR Exchange Rate	0.7628	0.0000
EA: Price of Imported Goods	0.8100	0.0000
EA: Price of Exported Goods	0.9239	0.0001

$^\$$*Newey-West bandwidth automatic selection using Bartlett kernel*

Table 2: Long-run relationship of Traded Goods Prices with Costs and Competitors

Method: Dynamic Least Squares (DOLS), HAC st. errors & cov.; no cointegrating equation deterministics				
Dependent variable:	Price of Exported Goods		Price of Imported Goods	
Sample: 2005Q1 2017Q2, no. of obs. after adjustment	46		48	
Automatic leads and lags specif. based on HQC crit.	4 leads, 6 lags		2 leads, 5 lags	
Explanatory variables	Coefficient		Coefficient	
Domestic Prices	0.4570	***	0.3308	**
Competitors' Prices	0.5369	***	0.6736	***
Adjusted R-squared	0.9548		0.9718	
S.E. of regression	0.0155		0.0187	
Normality test, JB prob.	0.3027		0.7195	
Unit root with Break test on residuals	<0.01		<0.01	

Note: ***, **, and * denote 1, 5, and 10 percent level of significance, respectively.

In addition to long-run estimates, we estimated another short-run dynamic model to find out the short-run relationship among our variables. That could also help to achieve a better fit of the models and as well as to assess whether the same impact restriction of exchange rate (*ER*) and international prices (*PF*) above holds in the short run. The dynamic model is specified in first difference, it allows up to four time lags *t*, and includes the error correction term (*ECT*) derived as a residual from the above equations. The short-term equations are written in the following form:

$$\Delta \ln(PT) = c_{ect}\, ECT_{-1} + \sum_{t=-1\,to\,-4} \Delta c_{pt} \ln(PT_t) + \sum_{t=0\,to\,-4} \Delta c_{pd} \ln(PD_t) + \cdots$$

$$+ \sum_{t=0\,to\,-4} \Delta c_{pf} \ln(PF_t) + \sum_{t=0\,to\,-4} \Delta c_{er} \ln(ER_t)$$

Table 3 displays the response of external trade prices in the short run. A parsimonious estimation of the short-run model helped to improve model fitness in both equations, as suggested by significantly lower standard errors than previous regressions. The results maintain the earlier conclusions of considerable PTM effects in the price setting behavior of both, exported and imported goods in Albania. Disentangling the impact of competitors' prices reveals that the reaction to international prices is similar to that of exchange rate movements in the export price equation; whereas in the import price equation that response is three times higher. Finally, the error correction term is found negative and statistically significant; its size around 0.4 suggests us a rather fast speed of adjustment of prices towards their long-run equilibrium.

Table 3: Short-run evidence for pricing-to-market effects

Method: Least Squares, HAC standard errors & covariance	Price of Exported Goods		Price of Imported Goods	
Explanatory variables	Coefficient		Coefficient	
Error Correction Term$_{-1}$	-0.4208	**	-0.3634	**
Lagged Trade Prices	-0.3469	***		
Domestic Prices	0.4851	***	0.4535	***
International Prices	0.5036	***	0.6672	**
ALL/EURExchange Rate	0.3946	**	0.2212	*
Dummy = 1 (Exp. 2009Q1; Imp 2008Q1)	0.0459	***	-0.0623	***
Dummy = 1 (Exp. 2016Q1; Imp 2009Q4)	-0.0460	***	0.0999	***
Sample period 2005Q1:2017Q2, no. of obs. after adjustment	45		48	
Adjusted R-squared	0.7187		0.7962	
S.E. of regression	0.0099		0.0107	
Normality test, JB prob.	0.5975		0.6026	
Autocorrelation: LM test prob. F(4)	0.8319		0.1781	
Heteroskedasticity: BPG test prob. F(6)	0.8176		0.2995	

*Note: ***, **, and * denote 1, 5, and 10 percent level of significance, respectively.*

Ramsey test signals that specification errors are likely in both models, suggesting omission of relevant variables or nonlinearity problems. Nevertheless, CUSUM of squares tests on S-R regressions suggest no significant anomaly in each model's performance since 2010. Moreover, in-sample forecast evaluation shows satisfactory performance (TICs turn out very modest), where biasedness appears less often to be a major contributor to forecast errors. When fitted values with a power of 2 to 3 enter as explanatory variables the F-tests are statistically significant at 10% in the export price equation and 5% in the import price equation. Our DOLS method used in the long-run estimation takes account of endogeneity and serially correlated disturbances. Therefore, model misspecifications might come from omission of relevant variables or nonlinearity issues.

Figure 3. Stability test results
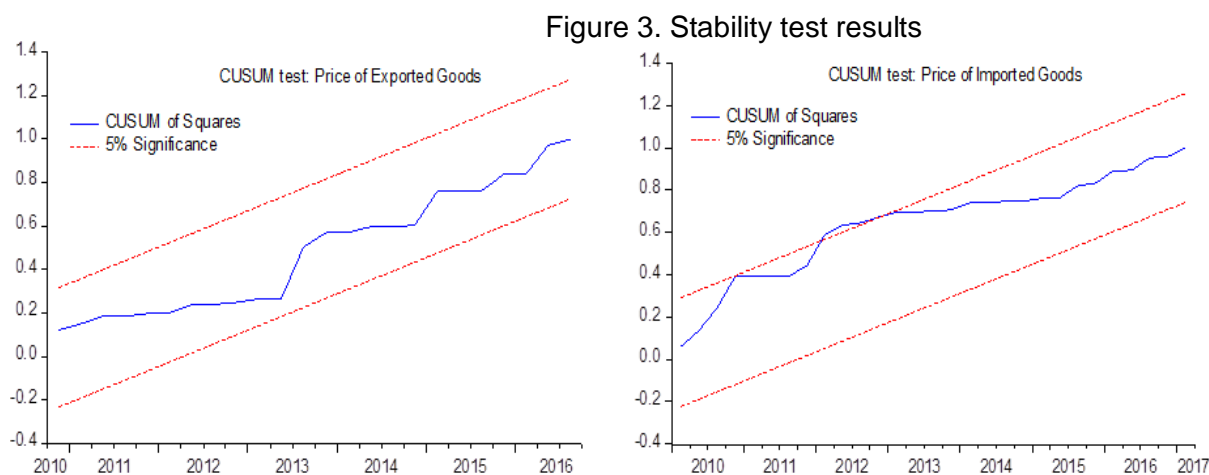
CONCLUDING REMARKS

Pricing-to-market effects analyzed in past three decades mostly in advanced economies assume that PTM derives from the market power. Recent studies have, however, evidenced that even when exporters have relatively small market shares they can deliver pricing-to-market. Our analysis finds evidence for PTM effects on Albania's external trade prices, which suggests that domestic firms might not be complete price takers as generally perceived. The long-term influence of PTM is found considerable on both export (0.46) and import (0.33) prices. Consequently, there is an incomplete pass-through from exchange rate and international prices to Albanian trade prices. Tests of stability show models' performance to be satisfactory. However, other relevant variables could help to improve model explanation, as suggested by Ramsey test.

Further research could be undertaken from a microeconomic perspective with the scope of shedding light whether PTM effects are confined to differentiated goods or apply to homogeneous goods as well. Depending on data availability, research analysis could be enriched by studying the link between PTM and trade policies, especially after free-trade-agreements that took place in the second half of 2000s.

REFERENCES

Asprilla, A. andN. Berman, O. Cadot, M.Jaud (2015), "Pricing-to-market, Trade Policy, and Market Power", Graduate Institute of International and Development Studies Working Paper Series, Working Paper N IHEIDWP04-2015

Bacchetta, P. and E. van Wincoop (2005), "A Theory of the Currency Denomination of International Trade", Journal of International Economics, 67, pp. 295-319.

Bailliu J. andE. Fujii (2004), "Exchange Rate Pass-Through and the Inflation Environment in Industrialized Countries: An Empirical Investigation", Bank of Canada, Working Paper 2004-21

Blecker R. and A. Razmi (2005), "Price Competition and the Fallacy of Composition in Developing Country Exports of Manufactures: Estimates of Short-Run Growth Effects" University of Massachusetts – Amherst, Economics Department Working Paper Series Economics

Brauer H. (1999), "Price setting in international markets", Kiel Working Paper No. 915

Bussière, M. (2007), "Exchange Rate Pass-Through to Trade Prices: the Role of Non-linearities and Asymmetries", ECB Working Paper No. 822.

Bussière, M., and S. Delle Chiaie, T. A. Peltonen (2014): "Exchange Rate Pass-Through in the Global Economy: The Role of Emerging Market Economies," IMF Economic Review, Vol. 62, No. 1, 146–178.

Devereux, M. B. and Ch. Engel, C. Tille, 1999, Exchange rate pass-through and the welfare effects of the euro, National Bureau of Economic Research, working paper no. 7382

Dornbusch, R. (1987), 'Exchange Rates and Prices', American Economic Review, 77, pp. 93-106.

Engel C. (2017), "The   Role of Exchange Rates   in International Price Adjustment", Macroeconomic Review, April 2017

Froot, K. and D. Klemperer (1989), 'Exchange Rate Pass-Through when Market Share Matters', American Economic Review, 79, pp. 637-654.

Gagnon, J. and M. Knetter (1995), 'Mark-up Adjustment and Exchange Rate Fluctuations: Evidence from Panel Data on Automobile Exports', Journal of International Money and Finance, 14(2), pp. 289-310.

Gil-Pareja, S. (2000), 'Exchange Rates and European Countries' Export Prices: An Empirical Test for Asymmetries in Pricing to Market Behaviour', Weltwirtschaftliches Archiv 136 (1), pp. 1-23.

Jaeger A., and K. Ross, Z. Kontelemis, M. Kieler, G. Meredith [2001], "Monetary and Exchange Rate Policies of the Euro Area", International Monetary Fund Report

Knetter, M. (1989), 'Price Discrimination by US and German Exporters', American Economic Review 79, pp. 198-210.

Knetter, M. (1993), 'International Comparisons of Pricing to Market Behaviour', American Economic Review 83 (3), pp. 473-486.

Krugman, P. (1986) "Pricing to Market When the Exchange Rate Changes." NBER Working Paper 1926, National Bureau of Economic Research, Cambridge, Massachusetts

Marston, R. (1990), 'Pricing to Market in Japanese Manufacturing', Journal of International Economics 29, pp. 217-236.

Penkova E. and P. Sinclair (2010), "Bulgaria's Export Prices and Pricing to Market Behaviour"

Rollo, V. (2014) "Unexpected pricing to market in goods classified as homogeneous."The Graduate Institute of International Development Studies Paper Series 2014.

Shelburne, R. C. (2010) "The global financial crisis and its impact on trade: the world and the European emerging economies," UNECE Discussion Paper Series, No. 2010.2 September 2010.

Swamy, P. and Stephan Thurman. 1994. "Exchange Rate Episodes and the Pass-Through of Exchange Rates to Import Prices." Journal of Policy Modeling vol. 16 (6): pp. 609-623.

Yang, J. (2007), "Is Exchange Rate Pass-through Symmetric? Evidence from US Imports", Journal of Applied Economics, 39, pp. 169-178.